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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/805,869

03/22/2004

Joseph Gerard Birmingham

MET 005

1786

23408

7590

03/27/2007

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PHILADELPHIA, PA 19123

EXAMINER

KURTZ, BENJAMIN M

ART UNIT

PAPER NUMBER

1723

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/805,869

Applicant(s)

BIRMINGHAM ET AL.

Examiner

Benjamin Kurtz

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1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Stevens US 3 633 751. Regarding claim 1, Stevens teaches a microimpactor system comprising a fluid conduit having a plurality of spaced-apart rows of microimpactors arranged in the fluid conduit substantially transverse to a main direction of flow of fluid through the fluid conduit, wherein each of said rows of microimpactors is formed by a microimpactor sheet (5, 3', 3'') having a plurality of openings in the sheet that define in each such sheet at least one line of two or more microimpactors (fig. 15 and 18).

Regarding claims 2-6, Stevens further teaches microimpactors in at least two successive rows are offset from each other (fig. 18); microimpactors in successive rows are spaced apart at a distance defined by one or more spacer sheets (2) interposed between the successive sheets of microimpactors (fig. 18); the fluid conduit includes a fluid inlet and a fluid outlet (col. 1, lines 39-48); the system further comprises means for moving fluid through the system (col. 2, lines 7-17) which performs the identical function in substantially the same way with substantially the same results as the fans or pumps disclosed herein; and the system comprises means for applying an electrical charge to at least one microimpactor sheet (col. 3, lines 9-20) which performs the identical

function in substantially the same way with substantially the same results as the electrical circuitry disclosed herein.

Regarding claim 8, Stevens teaches a microimpactor system comprising a fluid conduit having a plurality of spaced-apart rows of microimpactors arranged in the fluid conduit substantially transverse to a main direction of flow of fluid through the fluid conduit, wherein each of said rows of microimpactors is formed by a microimpactor sheet (5, 3', 3'') having a plurality of openings in the sheet that define in each such sheet at least one line of two or more microimpactors (fig. 15 and 18) wherein at least one or said microimpactor sheets is removable and replaceable (col. 7, lines 57-63, the stack of elements is clamped together which means the elements may be unclamped removed and replaced).

Regarding claim 9, a microimpactor system comprising a fluid conduit having a plurality of spaced-apart rows of microimpactors arranged in the fluid conduit substantially transverse to a main direction of flow of fluid through the fluid conduit, wherein each of said rows of microimpactors is formed by a microimpactor sheet (5, 3', 3'') having a plurality of openings in the sheet that define in each such sheet at least one line of two or more microimpactors (fig. 15 and 18) wherein at least two of said microimpactor sheets are made of different materials (col. 3, lines 7-8).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens '751 in view of Carr US 3 999 964. Stevens teaches the microimpactor system of claim 6 but does not teach means upstream from the microimpactor sheets for applying an electrical charge to particles borne in a fluid transported through the fluid conduit. Carr teaches a filter system where the particles in a fluid are charged upstream of the filter device (col. 2, line 64 – col. 3, line 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the upstream charging of particles as taught by Carr because the charge enhances the particles adherence to the collector (col. 1, lines 22-31).

### ***Response to Arguments***

Applicant's arguments filed 2/13/07 have been fully considered but they are not persuasive.

In response to applicant's argument that the microimpactor is an inertial system and the apparatus of Stevens is not, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In response to applicant's argument that Stevens does not teach microimpactors arranged transverse to the main direction of fluid flow through the device, Stevens teaches the main direction of fluid flow is from plate (1) to plate (6) (fig. 18). Localized flows parallel to the plates of Stevens occur but the main direction of flow is transverse

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to the plates, passing through the plates from one side to the other and not parallel to plates.

***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Kurtz whose telephone number is 571-272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

12/7/06

*K S Menon* 3/25/07  
Krishnam S Menon  
Primary Examiner